



Assessment of Climate-Related Risks & Opportunities



European Bank
for Reconstruction and Development

Uzkimyosanoat
JOINT STOCK COMPANY

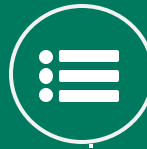
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A photograph of an industrial refinery or chemical plant at sunset. The sky is a mix of orange, pink, and blue. Several tall, cylindrical distillation columns are visible, some with ladders and platforms. The plant is illuminated by warm lights, and a fence is visible in the foreground.

Executive Summary

Executive Summary

As part of Phase 2 of the project “Uzbekistan: Low-Carbon Pathway for the Chemical and Fertilizer Sector” a climate-related risks and opportunities assessment for Navoiyazot was conducted. During the assessment it was analyzed how the Navoiyazot operation is affected by physical climate change and how Navoiyazot faces risk or opportunities caused by a transition towards a low carbon economy.

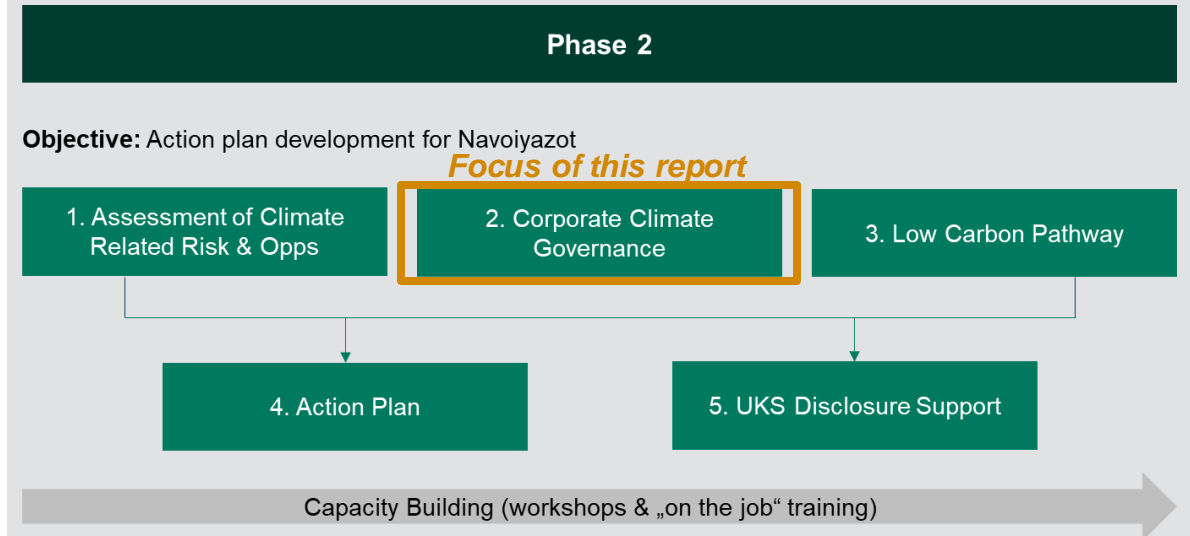
The assessment includes a scenario analysis to assess how the identified risk and opportunities evolve over time. A summary of the main findings is showcased on the next slide. The assessment included a kick-off workshop during which the approach and concept of a climate related risk and opportunity assessment was explained, and a validation workshop to sense check assumptions with Navoiyazot’s personnel.

Navoiyazot Plant has a 'Low' exposure to climate physical hazards. However, the operation may be more at risk of experiencing the impact of specific hazards such as Water Stress and Drought, Wildfires and Extreme Cold. Due to increase in severity in these extreme events, negative impacts on the business could be exacerbated. Also, further assessment on Water Stress and Drought is recommended.

Overall, the transition-related risk and opportunities are balanced given Navoiyazot’s business footprint (mostly local or regional customers) and since regional and local regulatory and market pressure for a transition to a low carbon economy are currently limited. This could change if Navoiyazot is looking to enter new markets, Uzbekistan is updating its carbon related policies or if looking for internal investment.

A brief overview of key risk and opportunities are outlined on the next slide.

Overview of Phase 2 of Uzbekistan: Low-Carbon Pathway for the Chemical and Fertilizer Sector



Insights from this report can be used to inform Navoiyazot’s strategy and please note that results from this analysis will feed into the *Action Plan* and the *UKS Disclosure Support*, which summarizes recommended actions from different tasks that are conducted in parallel such as the *Corporate Climate Governance* and *Low Carbon Pathway*. The action plan will be issued in a separate document.

Summary of Main Findings across Navoiyazot plant



The conducted Scenario Analysis of physical and transition risks and opportunities gives an overview of climate-related risk across Navoiyazot's business. The highest overall risks and opportunities are outlined below.

Very High and High Risks

- The identified very high and high risk are *Water Stress and Drought, Wildfires and Extreme Cold, Carbon pricing mechanisms.*
- Business exposure to most risks is projected to increase from 2030 to 2050, across all climate scenarios.
- Some of the risks are related to:
 - Reduced productivity,
 - production stoppages and therefore loss of profits
 - Increase in water costs
 - Potential upcoming regulatory requirements
- There are some existing controls in place for physical risks; **however due to increase in severity of these extreme events, the arid condition could exacerbate and have negative impacts on the business.**

Moderate Risks


- The identified **moderate** risks relate to physical and transition-related risks and include:
 - *Extreme Heat*
 - Shift in financial stakeholder / investor feedback that favour low carbon investments and enhanced data reporting obligations
- There some activities in place that start to manage these risks (e.g. data monitoring & review of GHG emission, participation to energy efficiency initiatives, exploring new technology alternatives, etc.)
- There are some existing controls in place for physical risks (e.g. trees planted to improve high quality, etc.); however due to increase in severity of these extreme events, **further assessment on joint effect of *Extreme Heat and Water Stress and Drought* is recommended.**

Opportunities

Navoiyazot has identified and assessed transition opportunities. These are related to the Opportunity to sell new and innovative low-carbon products and decreased cost due to Increased energy efficiency.

Navoiyazot – Company overview and scope



Company Name	Sector	Business Description	Location of Operation
Navoiyazot	Manufacturing and chemicals	<p>Navoiyazot is the manufacturer of mineral fertilizers and products of organic synthesis. The company manufactures ammonia, ammonium nitrate, acrylonitrile, sodium cyanide, ammonium sulfate, hydrocyanic acid and mineral fertilizers.</p> <p>The operation sits on approximately 3,864,946.46 m² of land and includes a processing plant, railway station and process waste residual ponds/lakes.</p>	<p>The operation is located at: 486J+R3H Navoiyazot, Navoi 210105, Uzbekistan</p> 

This report presents results from the-climate related risk and opportunities assessment for Navoiyazot. The Task Force for Climate Related Financial Disclosure (TCFD) provides a guideline on how to conduct such analysis and is applied for this assessment. This report should be read in conjunction with the *Corporate Climate Governance Report* that assesses how Navoiyazot considers climate-related aspects as part of their governance, strategy, risk management and targets and metrics. The climate-related risks and opportunities assessment can be used to inform Navoiyazot’s strategy, as it assesses how physical and transition risk and opportunities will evolve over time. For further details on the different types of risk and opportunities, please see next slide. Please note that results from this analysis will feed into the *Action Plan*, which summarizes recommended actions from different tasks including this task. The action plan will be issued in a separate document.



Introduction

Climate-related Risks and Opportunities

Navoiyazot is committed to disclosing and responding to climate-related issues in line with the TCFD



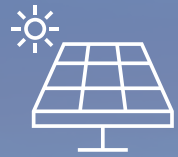
The **expectation** – from policymakers, financial regulators, lenders, investors and corporates – that companies **assess** and **disclose climate-related** risks is **increasing rapidly**. Physical climate events could also impact **business strategy** and **planning**. These **drivers** have prompted **Navoiyazot** to assess transition and physical climate risks and opportunities in alignment with the **Task Force on Climate-Related Financial Disclosures (TCFD)**.

The TCFD has called for organisations to **assess, manage** and **disclose** their exposure to **climate-related risks** and **opportunities**. The **Navoiyazot** operation could be **exposed** to a **range** of these.

There are **two types of climate-related risks and opportunities** that companies should assess their exposure to these are:

 <h2>Physical</h2>	<p>Impacts resulting from physical manifestations of climate change (generally categorised as either acute – associated with extreme weather events e.g., floods or hurricanes – or chronic – relating to longer-term shifts in weather patterns e.g., higher temperatures, rising sea levels, increased rainfall)</p>
 <h2>Transition</h2>	<p>Impacts associated with the global movement towards a low-carbon future (i.e., impacts associated with market, technological, reputational, policy/regulatory and legal developments).</p>

ERM assessed for **Navoiyazot** its exposure towards physical and transition risk and opportunities and includes scenario analysis. Section 3 and 4 outlined the methodology and the results for each type.



Transition Risks and Opportunities

Methodology and Results

ERM's methodology for assessing transition risk and opportunity

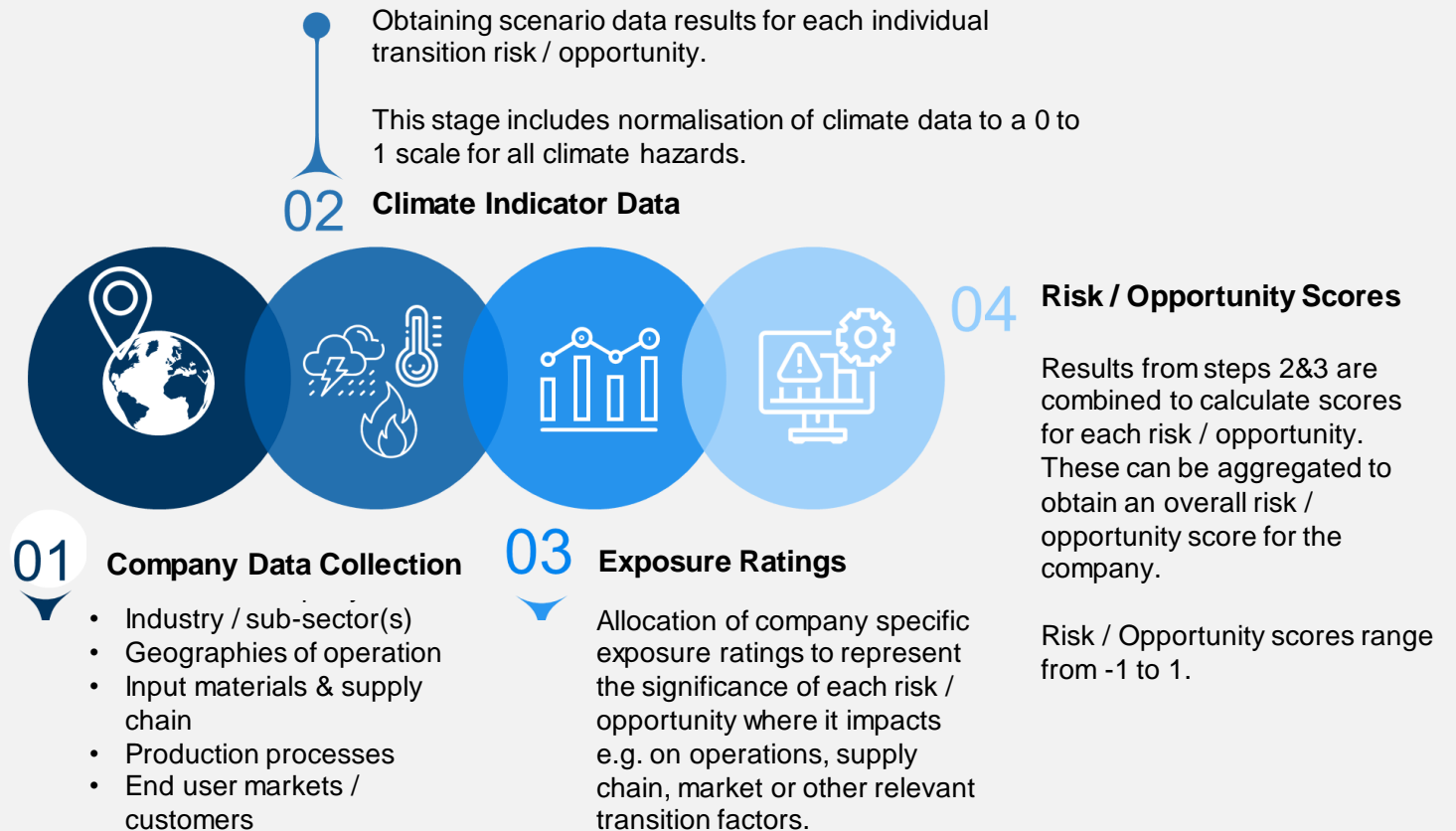
Transition Methodology

ERM utilises **different future climate scenarios** and multiple time horizons to view potential changes in risks and opportunities over time. **Scenario indicators** are assigned to risk and opportunity items which act as **proxies** to explore how they may develop in each scenario.

Transition scenario indicator data comes primarily from the **Network for Greening the Financial System (NGFS) Climate Scenarios 2022**, supplemented by the International Energy Agency's (IEA) **World Energy Outlook 2023***.

Besides a business as usual a net zero scenario is used.

**A detailed explanation of the chosen scenarios and scenario data please refer to Annex A*



Transition related risks

Relevance ratings for climate-related risk were evaluated and used to assign 'exposure ratings' for the scenario analysis based on ERM's judgement. These represent the significance of each risk / opportunity where it impacts, e.g., on operations, supply chain, or market.



ERM

Risk / Oppo Name	Category	Risk / Opportunity	Rationale	Relevance (low, medium, high)
Carbon pricing	Policy & Legal	Risk	<p>It is expected that the transition to a low-carbon economy will require large scale implementation of carbon pricing mechanisms, which would affect a company's OPEX.</p> <p>Navoiyazot is currently an Uzbekistan state-owned company and to date Uzbekistan has not implemented any carbon pricing mechanisms. However, the country's updated 2030 NDCs state that Uzbekistan might implement a carbon tax in future years which could impact Navoiyazot directly. Also, carbon pricing policies in export markets, e.g. the EU Carbon Border Adjustment mechanism (CBAM), could affect the company. Currently the impact is assumed to be very limited since Navoiyazot currently does not export significant volumes to Europe (most of its revenue comes from domestic clients, as well as export to China, Russia etc.).</p>	Low-medium
Shift in financial stakeholder/ investor feedback	Markets	Risk	<p>A tendency of investors favouring lower-emissions generators (sustainable investment) is expected. Chemical companies which prove that they are on track to achieve their climate targets or contribute with their products and services to a decrease in GHG emissions will be more attractive to investors while being a high-carbon emitting company potentially curbs interest of external investors.</p> <p><u>According to publicly available information the government of Uzbekistan is preparing for privatising the chemicals and fertilizer and looking for foreign direct investment.</u></p>	Low-medium
Enhanced emissions-reporting expectation	Policy & Legal	Risk	<p>Currently, there are no emissions reporting obligations for Navoiyazot in Uzbekistan. If the company is privatized and (partially) acquired by foreign investors which fall under any mandatory climate disclosures, increasing emissions reporting requirements might arise. Further, certain markets or regulations (e.g. EU CBAM) will require carbon-related product declarations; Currently, Navoiyazot has a small internal Sustainability team and no established processes around climate reporting, and additional resources would be required leading to increased operating expenses. For now, this risk is assumed to have a low impact on Navoiyazot.</p>	Low

Transition related opportunities

Relevance ratings for climate-related opportunities were evaluated and used to assign ‘**exposure ratings**’ for the scenario analysis based on ERM’s judgement. These represent the **significance of each risk / opportunity** where it impacts, e.g., on operations, supply chain, or market.

Risk / Oppo Name	Category	Risk / Opportunity	Rationale	Relevance (low, medium, high)
Increased energy efficiency	Resource Efficiency/ Policy & Legal	Opportunity	<p>Chemical companies could achieve energy efficiency and energy-related greenhouse gas emissions reductions through efficiency upgrades regarding their production or distribution processes, resulting in potentially reduced OPEX through energy savings.</p> <p>In its NDCs Uzbekistan commits to an increase in energy efficiency in industrial enterprises by at least 20% but unless Uzbekistan phases out its fossil fuel subsidies or new chemical companies enter the market and create competition, the impact of this opportunity is considered low.</p>	Low
Opportunity to sell lower-carbon products	Products / Services	Opportunity	<p>Customers in the European, American and/ or Asian market are increasingly favouring low carbon products as it helps them to achieve their own Navoiyazot is currently exploring how to decarbonise its production process (e.g. use of green electricity), that would allow the company to decrease the carbon footprint of products, making them competitive and attractive for new markets and customers with the potential to increase revenue.</p> <p>Currently, most of the revenue is generated locally or in markets that are less carbon sensitive making it a low opportunity at the moment.</p>	Low

Company Analysis– Future Risk and Opportunities

Key Trends & Associated Risk / Opp:

CRRO Assessment Sector Risk / Opportunity	Risk/ Opp Score		
	2030	2040	2050
Carbon Pricing	-0,18	-0,41	-0,43
Enhanced emissions-reporting obligations	-0,01	-0,06	-0,10
Shift in financial stakeholder / investor feedback	-0,01	-0,07	-0,10
Increased energy efficiency	0,06	0,32	0,50
Opportunity to sell new and innovative low-carbon products	0,00	0,07	0,09
Average Risk/Opp score	-0,03	-0,03	0,00

Future Risk/Opportunity Score	
Less than -0.25	High Risk
-0.15 to -0.25	Moderate Risk
-0.05 to -0.15	Low Risk
0.05 to -0.05	Limited Risk/Opp
0.15 to 0.05	Low Opp
0.25 to 0.15	Moderate Opp
More than 0.25	High Opp

- Navoiyazot faces on average a **limited exposure** towards risks and opportunities caused by a transition towards a low carbon scenario.
- Given Navoiyazot’s business footprint (mostly local or regional customers) and the fact that currently, regional regulatory and market pressure for a transition to a low carbon economy are limited, the company’s exposure to transition-related risk and opportunities is very limited. However, this could change if Navoiyazot is looking to expand to new markets that favor low carbon products or to increase attractiveness to external investors.
- Key driver for risk exposure are **rising costs from the implementation of different carbon pricing mechanisms** (e.g. a carbon tax in Uzbekistan or through policies like CBAM) which are balanced off through opportunities related to **cost savings caused by increased energy efficiency** of own operations.
- Enhanced emissions-reporting obligations, as well as a shift in investor feedback that favor low carbon investments can lead to increased operating expenses and decreased capital availability are balanced off through revenue increases related to the **opportunity to sell new and innovative low carbon products, like low-carbon fertilizer**.
- It is expected that most of the risks and opportunities will become material starting from 2040.

Note: Quantitative assessment is high level and all impacts and their significance are estimated. Due to data availability global data was used.

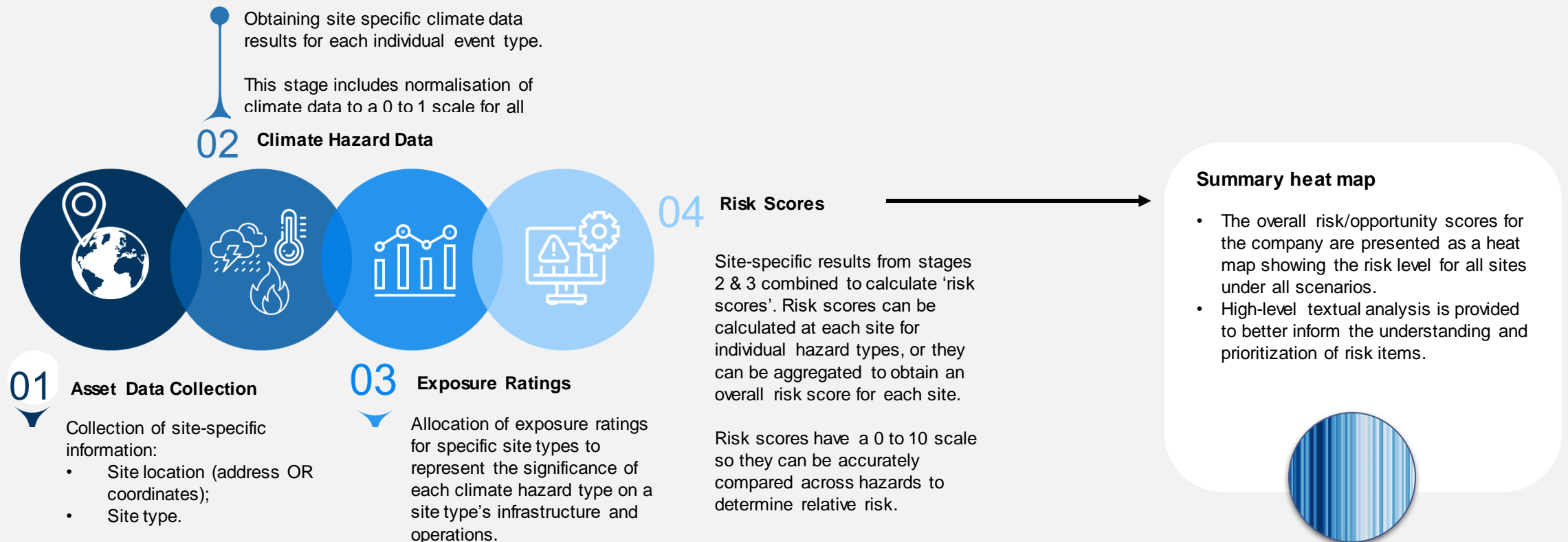


Physical Risks

Methodology and Results

Summary of Approach

The physical assessment uses ERM's **Climate Impact Platform (CIP)**. The figure below outlines the methodology followed by CIP to complete the physical assessment of risks relevant to Navoiyazot's assets. Further details on the methodology and the used scenarios can be found in Annex B.



Climate Event Types in CIP

Hazards Assessed in CIP for Navoiyazot's Assessment

CIP uses nine climate hazard types and indicators to assess present day conditions and future projected trends. The table below details each of these climate hazard types, alongside their associated indicators and units.

Acute Risks Chronic Risks

Hazard Type	Climate Indicator(s)	Unit	Definition
Extreme Heat	Warm Spell Duration Index (WSDI)	Days	Extreme heat looks at whether a location will experience extended periods of unusually high temperatures for a given time of year. Increased number of days may drive more severe extreme heat impacts.
Extreme Cold	Cold Spell Duration Index (CSDI)	Days	Extreme cold looks at whether a location will experience extended periods of unusually low temperatures for a given time of year. Increased number of days may drive more severe extreme cold impacts.
River Flooding	River flooding inundation depth	Metres	Data indicating whether, and the degree to which, a location might flood as a result of a river overtopping. Increased inundation depths may drive more severe impacts.
Extreme Rainfall Flooding	Maximum five-day rainfall	Millimetres	Data indicating whether, and the degree to which, a location might flood as a result of extreme rainfall occurring in locations vulnerable to high rainfall levels. Increased inundation depths may drive more severe impacts.
Coastal & Offshore	Coastal flooding inundation depth	Metres	Data indicating whether, and the degree to which, a coastal location might flood as a result of storm surges, high tides and sea level rise. Increased inundation depths may drive more severe impacts.
Extreme Winds & Storms	Maximum tropical cyclone wind speed	Knots	Data indicating the maximum wind speed associated with a tropical cyclone that a location may be exposed to. Higher wind speeds may drive more severe impacts.
Wildfires	Maximum burned area/ Forest Fire Danger Index	km ² /Day	1) Data indicating whether the climatic conditions (weather) are favourable for fires to ignite and burn. 2) Observational data indicating whether a location has been burnt in the last 30 years. Higher number of days with favourable fire conditions and larger observed burned areas may drive more severe or frequent impacts from wildfires
Rainfall Induced Landslides	Rainfall-Induced Landslide Index (RILI)	Days	Data indicating the annual number of days with a potential chance of a landslide event occurring, based on extreme rainfall and topographical features. Increased number of days may drive an increased incidence of impacts as a result of landslides.
Water Stress & Drought	Water Stress	Categorical	Categorical data indicating water stress using the ratio between available water (supply) and water demand at a location. Higher categories may drive more severe impacts from water stress & drought.

Detailed Results – Heatmap – Navoiyazot

Baseline and Projected Risk Scores by Hazard at the Navoiyazot Operation

Hazard	Baseline (2023)	2030		2050	
		SSP1-2.6	SSP5-8.5	SSP1-2.6	SSP5-8.5
Extreme Heat	Low (1.20)	(1.86)	(2.10)	(2.28)	(3.00)
Extreme Cold	High (3.60)	(2.12)	(2.96)	(2.36)	(2.32)
River Flooding	Null (0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Extreme Rainfall Flooding	Null (0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Coastal and Offshore	Null (0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Extreme Winds and Storms	Null (0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Rainfall-Induced Landslide	Null (0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Water Stress & Drought	Very High (8.00)	(8.00)	(8.00)	(8.00)	(8.00)
Wildfires	Very High (6.32)	(6.32)	(6.24)	(6.48)	(6.56)

This heatmap presents the absolute risk scores (numbers in brackets) and projected change in risk scores (icons) for each hazard across all time horizons and scenarios. Absolute risk scores in bold indicate a score of 'High' or greater. Hazards with the greatest risks to the site are Extreme Heat, Extreme Cold, Water Stress & Drought, Wildfires.

Two keys are shown for

- 1) absolute risk scores (provided for baseline and future time horizons in brackets), and
- 2) change in risk score from baseline (provided for future time horizons).

An interpretation of the heatmap is provided on the next slide.

Risk Score	Hazard Score
Minimal	0 to 1
Low	1 to 2
Moderate	2 to 3
High	3 to 4
Very High	4 to 10

Change from Baseline Risk Score						
Significant Decrease	Moderate Decrease	Minimal Decrease	No/Limited Change	Minimal Increase	Moderate Increase	Significant Increase

Note: A detailed breakdown of the site specific hazards and a summary of the climate data for the low and high emission scenarios can be found in Appendix C.

Detailed Results – Interpretation - Navoiyazot

Key Hazard Trends & Associated Risk:

The chemical and manufacturing **Navoiyazot Plant** in Navoi, Uzbekistan, averages '**Low**' exposure to climate physical hazards. However, the operation may be more at risk of experiencing the impact of specific hazards, which are outlined below.

Water stress & Drought and Wildfires may pose the greatest risk going forward: Below is a list of potential impacts associated with these specific hazards.

Both hazards pose a **sustained 'Very High'** risk to the operation across all time horizons and scenarios. This has the potential to have a severe impact on the operation, including:

- Low water flows can reduce the quality and volume available for use, resulting in an increase in OpEx costs for the purchase of clean water for use in the production processes.
- Water infrastructure investments and improved water efficiency mechanisms may have to be implemented which will significantly impact CapEx costs.
- Health and safety risk for staff if there is not adequate drinking water supply.
- Wildfires can cause direct damage to operational assets and health and safety of site personnel especially if there is direct flame and/or heat on infrastructure. This can have an impact on both CapEx and OpEx costs.

Although there is currently a **'High' risk of Extreme Cold** events, there is a 'Moderate' decrease in future trends, under both scenarios, indicating a potential reduction in associated impacts such as:

- Business interruption or loss of productivity due to frozen power lines or equipment failures.
- Safety incidents for employees due to icy surfaces leading to slip and fall accidents.

Currently, there is a **'Low' risk to Extreme Heat** events, however, there is a **'Minimal' to 'Moderate'** increase in future trends, under both scenarios. This indicates a potential increase in associated impacts such as:

- An increased need for additional cooling capacity of temperature-controlled environments due to temperature sensitivity of the production processes. This could significantly increase OpEx costs.
- Extreme heat events can compromise safety thresholds and increase the potential for operation failures, such as fires, explosions, etc. This can have significant implications on CapEx costs.



Annex A

Transition - Methodology

Scenario Indicators used in this assessment



The assessment uses **scenario indicators** to give a ‘headline’ view of the **sector climate-related risks and opportunities**. These are **mapped to each risk and opportunity** to assess present day conditions and future projected trends. Transition scenario indicator data comes primarily from the **Network for Greening the Financial System (NGFS) Climate Scenarios 2022**, supplemented by the **International Energy Agency’s (IEA) World Energy Outlook 2023**.

Risk / Opportunity Name	Scenario Indicator	Source
Carbon pricing	Carbon Price	IEA WEO 2023
Shift in financial stakeholder/ investor feedback	CO2 Emissions per Capita	NGFS - REMIND-MAgPIE 3.0-4.4
Enhanced emissions-reporting expectation	CO2 Emissions per GDP	NGFS - REMIND-MAgPIE 3.0-4.4
Increased energy efficiency	Energy Efficiency	NGFS - REMIND-MAgPIE 3.0-4.4
Opportunity to sell lower-carbon products	Chemical Sector Emissions	NGFS - REMIND-MAgPIE 3.0-4.4

Transition Climate Scenarios used in the assessment: NGFS

The **NGFS** partnered with an expert group of climate scientists and economists to design **6 hypothetical scenarios** to cover a broad range of physical and transition risks. These scenarios utilise **extensive data sets and energy modelling** to provide different assumptions around how emissions reductions might be achieved towards 2050 and the resultant temperature outcomes. Each scenario applies a **varying composition** to sectors, for example, the **proportion of renewables in the energy mix**.



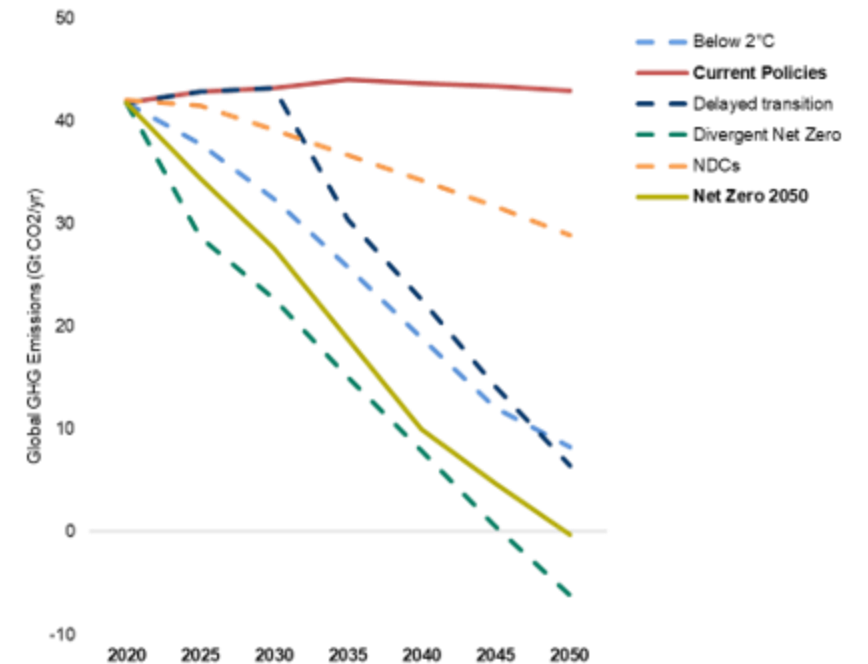
Transition scenarios

As recommended by the TCFD, scenarios should be used to evaluate the company in a **base case and a low carbon range**. Accordingly, we have utilised two forward-looking climate scenario:

- **Current Policies** – This scenario is most aligned with current policy and economy wide progress, with an expected temperature outcome of + ~3°C. As such, this is to an extent already baked into company risk management.
- **NZ2050** – This is an ambitious scenario that limits global warming to 1.5 °C through stringent climate policies and innovation, reaching net zero CO₂ emissions around 2050. This scenario assumes that ambitious climate policies are introduced immediately.

These have been supplemented by data from other scenarios such as the IEA WEO where adequate data is not available in the NGFS data set.

NGFS Emissions Pathways



Transition time horizons

Three future time horizons are considered in the assessment together with the baseline (current climate) conditions. These were considered most applicable to Navoiyazot's business:

- **2030**
- **2040**
- **2050**

Risk / Opportunity Scores are determined for each Climate-related Risk and Opportunity

Transition risk and opportunity scores range between **-1 (high risk) to 1 (high opportunity)** which indicate represent the change from the baseline. The higher the change from the baseline, the higher the opportunity or risk. Thresholds for denoting high, moderate and low risk, as well as high, moderate and low opportunity are outlined below.

Future Risk/Opportunity Score		
	Less than -0.25	High Risk
	-0.15 to -0.25	Moderate Risk
	-0.05 to -0.15	Low Risk
	0.05 to -0.05	Limited Risk/Opportunity
	0.15 to 0.05	Low Opportunity
	0.25 to 0.15	Moderate Opportunity
	More than 0.25	High Opportunity



Annex B

Physical - Methodology

Physical Climate Scenarios & Time Horizons

The 2021 Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report (AR6) uses **Shared Socio-economic Pathway (SSP)** scenarios to assess the state of the physical climate under a range of plausible futures.

In this assessment **SSP1-2.6** and **SSP5-8.5** are used under the time horizons of 2030 and 2050.



Physical scenarios

SSPs combine qualitative storylines of societal features and quantified measures of development (such as GDP) alongside climate data to create plausible scenarios for how quickly humans can curb emissions. **The choice of scenarios and time horizons used in this assessment is aligned to TCFD best practice.**

The scenarios chosen for this assessment are:

- The **SSP1-2.6** scenario, a **low emissions scenario** that stays below 2°C warming by 2100, aligned to current commitments under the Paris Agreement. Best estimate temperature by 2100: 1.8 °C.
- The **SSP5-8.5** scenario, a **high emissions scenario**, which follows a 'business as usual' trajectory, assuming no additional climate policy and seeing CO₂ emissions triple by 2100. Best estimate temperature by 2100: 4.4 °C.



Physical time horizons

Two future time horizons are considered in the assessment together with the baseline (current climate) conditions. These were considered to be most applicable to Navoiyazot's business:

- **2030** (mid-term, based on data from 2015-2044)
- **2050** (long-term, based on data from 2035-2064)

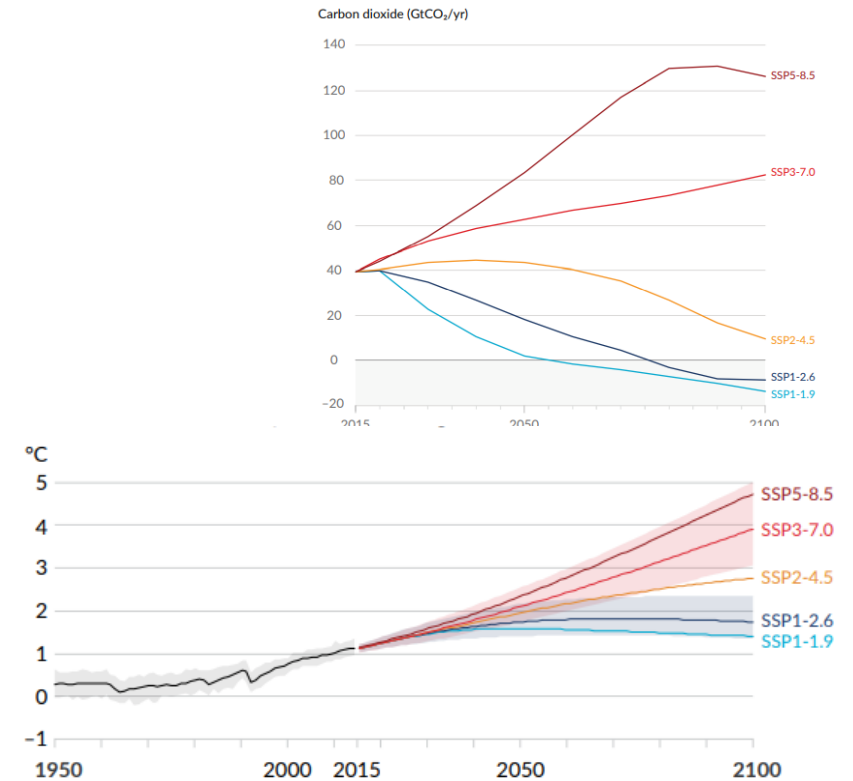


Figure: Projections of CO₂ emissions (top) and global surface temperature change (bottom) under the five SSPs.

Climate data sources used in the assessment

Projections

The table below provides details on the variable and respective source used for the **projections** results for each climate hazard. All variables are projected under the IPCC's SSP5-8.5 scenario for the time periods of 2030 and 2050.

Climate Hazard	Variable	Data Source
Extreme Heat	Projected Change in Warm Spell Duration Index (WSDI)	IPCC
Extreme Cold	Projected Change in Cold Spell Duration Index (CSDI)	
River Flooding	Projected Change in Flooding Inundation Depth for a 1 in 500-year river flood event	Fathom-Global 2.0
Extreme Rainfall Flooding	Projected Change in Max Daily Rainfall	
Extreme Winds & Storms	Projected Maximum Tropical Cyclone Wind Speed	IBTrACS
Wildfires	Projected Change in Forest Fire Danger Index Days (FFDI)	IPCC
Rainfall-induced Landslides	Projected Change in Rainfall Induced Landslide Index (RILI)	NASA and IPCC
Water Stress & Drought	Projected Change in Water Stress	World Resources Institute (WRI)

Climate Risk Scores in CIP

Guidance on Thresholds

What is a Risk Score?

A risk score is a quantitative number used to assess the current and projected impacts from physical climate event types. This is based on climate data and an asset's exposure rating.

- A high-risk score indicates high exposure to a climate hazard, and/or a high potential impact of that climate hazard.
- Risk scores can be calculated for each asset for individual (i.e., a 'Hazard Risk Score'), or these can be aggregated to obtain a risk score for the overall asset (i.e., an 'Asset Risk Score').

Interpreting Risk Scores

- The Climate Impact Platform provides an interpretation of risk scores by categorizing the risk score value into one of five categories between Minimal and Very High. The thresholds for the levels of risk are outlined in Table A.
- Table B outlines the thresholds used to identify the magnitude of the level of increase or decrease in each risk score from baseline into the future. For example, if a baseline hazard risk score is 2.0, and the 2050 hazard risk score is 3.5, then the hazard risk score has increased by 1.5 indicating a moderate increase. If a baseline asset risk score is 2.0, and the 2050 asset risk score is 3.5, then the asset risk score increased by 1.5 indicating a significant increase.
- In all cases, red indicates an increase in the risk score into the future, with darker red indicating a larger increase. Blue indicates a decrease in the risk score into the future, with darker blue indicating a larger decrease.

A

	Minimal	Low	Moderate	High	Very High
Asset Risk Score	0 to 1	1 to 2	2 to 3	3 to 4	4 to 10
Hazard Risk Score	0 to 1	1 to 2	2 to 3	3 to 4	4 to 10
Normalized Values	0 to 0.2	0.2 to 0.4	0.4 to 0.6	0.6 to 0.8	0.8 to 1

B

	Significant Decrease	Moderate Decrease	Minimal Decrease	No / Limited Change	Minimal Increase	Moderate Increase	Significant Increase
Asset Risk Score	-1 or below	-0.5 to -1	-0.125 to -0.5	-0.125 to 0.125	0.125 to 0.5	0.5 to 1	1 or above
Risk Score	-2 or below	-1 to -2	-0.25 to -1	-0.25 to 0.25	0.25 to 1	1 to 2	2 or above
Normalized Values	-0.2 or below	-0.1 to -0.2	-0.025 to -0.1	-0.025 to 0.025	0.025 to 0.1	0.1 to 0.2	0.2 or above

Tables indicating the thresholds used to (a) identify absolute risk scores for baseline and projections, and (b) identify the magnitude of change in risk scores across future time horizons for each climate hazard.

CIP Risk Level Definitions

The level of risk to an asset is dependent on the specific infrastructure and operations, alongside the likelihood of a specific physical climate hazard (e.g., flooding) occurring in the asset location. The general definitions for each risk level are outlined in the table below.

Risk Level	General Definition
<p style="text-align: center;">Very High</p>	<p>Climate risk is considered to be very high. Potential impacts may:</p> <ul style="list-style-type: none"> • Be long term (possibly permanent), severe and financially significant. • Have extensive social and health implications with national or international reputational impacts. • Affect large areas of the environment over a period of months, impacting high biodiversity areas. <p>It is likely that the entirety of the overall asset would be impacted.</p>
<p style="text-align: center;">High</p>	<p>Climate risk is considered to be high. Potential impacts may:</p> <ul style="list-style-type: none"> • Be long term (months) and financially significant to operations. • Have extensive social and health implications with national or international reputational impacts. • Affect large areas of the environment over a period of months impacting high biodiversity areas. <p>It is likely that a large proportion of the overall asset would be impacted.</p>
<p style="text-align: center;">Moderate</p>	<p>Climate risk is considered to be moderate. Potential impacts may:</p> <ul style="list-style-type: none"> • Be medium term (weeks) and moderately financially significant to operations. • Have minor/medium social and health implications with local reputational impacts. • Affect moderate areas of the environment over a period of weeks, impacting low biodiversity areas. <p>It is likely that a moderate proportion of the overall asset would be impacted.</p>
<p style="text-align: center;">Low</p>	<p>Climate risk is considered to be low. Potential impacts may:</p> <ul style="list-style-type: none"> • Be short term (days) and not financially significant to operations. • Have minimal social and health implications with limited reputational impacts. • Affect small areas of the environment over a short period. <p>It is likely that a small proportion of the overall asset would be impacted.</p>
<p style="text-align: center;">Minimal</p>	<p>Climate Risk is considered to be minimal with limited potential effects to assets.</p>



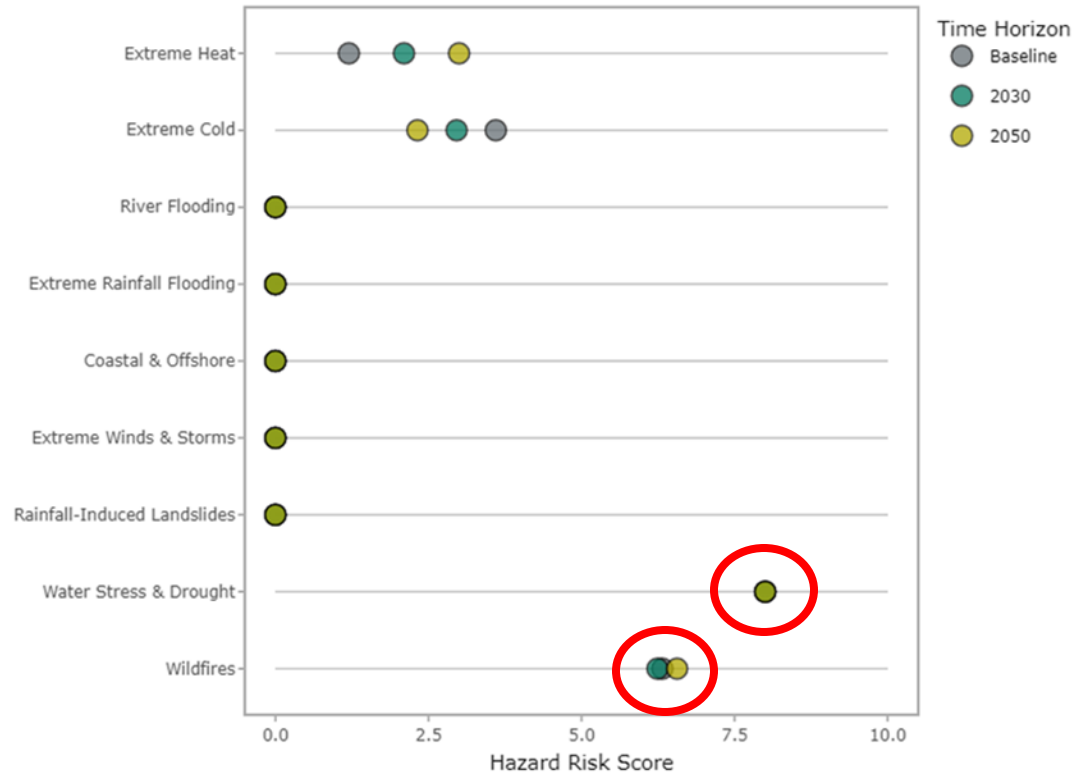
Annex C

Physical – detailed results


Hazard & Climate Data Summary


Review of potential physical climate risks for the high emission pathway (SSP5-8.5)


Temporal Change in Hazard Risk Score




Key Messages

 **Water Stress and Drought** – potential to be **‘Very High’**, across all time periods.

 **Wildfires** – potential to be **‘Very High’**, across all time periods.

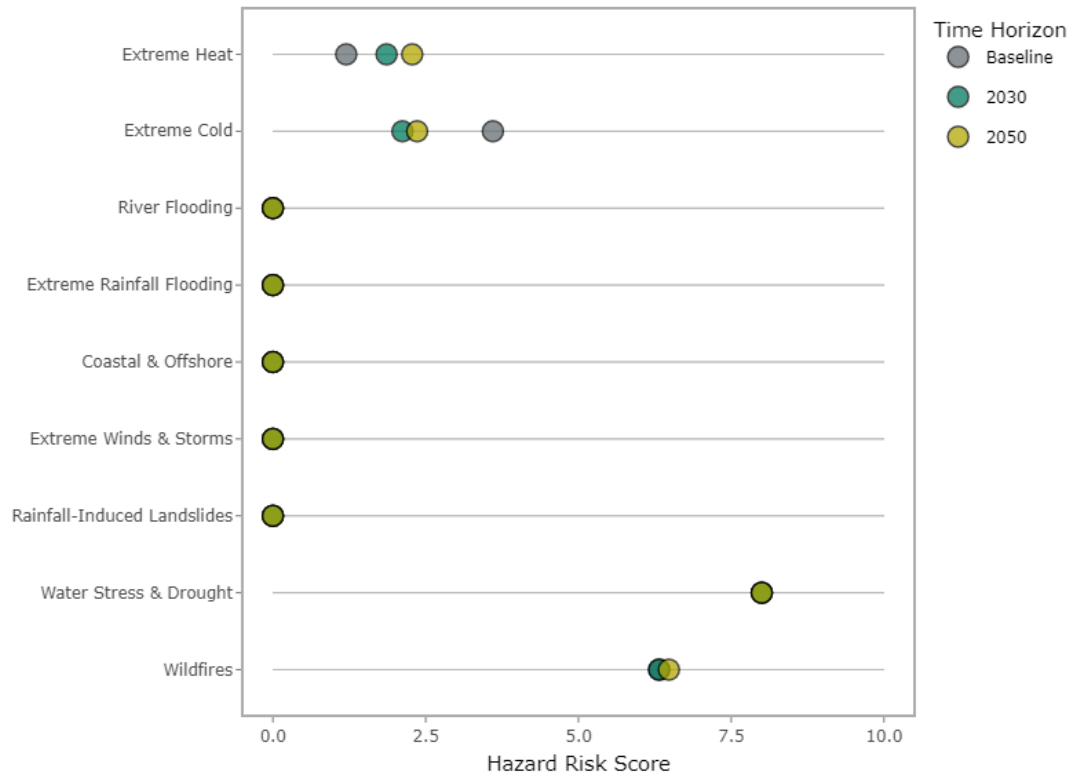
 **Extreme Heat** – potential to be **‘Low’**, at current condition. Projected to increase to **‘High’** by 2050.

 **Extreme Cold** -potential to be **‘High’**, at current condition. Projected to decrease to **‘Moderate’** by 2050.

Hazard & Climate Data Summary

Initial review of potential physical climate risks against SSP1-2.6

Temporal Change in Hazard Risk Score



Key Messages



Water Stress and Drought –potential to be ‘**Very High**’ across all time periods.



Wildfires–potential to be ‘**Very High**’ across all time periods.



Extreme Heat –potential to move from a ‘**Low**’ to ‘**Moderate**’ hazard by 2050.



Extreme Cold –potential to be ‘**High**’, at current condition. Projected to decrease to ‘**Moderate**’ by 2030 and 2050.

Site specific hazard & climate data summary

Site results for the high emission pathway (SSP5-8.5)

Baseline and projected trend results for each climate hazard at Navoiyazot 's location are provided below.

Hazard assessed as likely relevant to the site
Hazard assessed as likely not relevant to the site

Hazard Grouping	Present Day	Climate Projection Trend (2030 and 2050, SSP5-8.5)	
Coastal and Offshore Flooding	Coastal Flooding Inundation Dept (m) 0 m	Projected change in Coastal Flooding Inundation Dept (m)	
		+ 0 m	+ 0 m
Extreme Cold	Cold Spell Duration Index (days) 13.50 days	Projected change in Cold Spell Duration Index (days)	
		- 4.4 days	- 7.9 day
Extreme Heat	Warm Spell Duration Index (days) 25.40 days	Projected change in Warm Spell Duration Index (days):	
		+ 33 day	+ 79.6 days
Extreme Rainfall Flooding	Pluvial Flooding Inundation Dept (m) 0 m	Projected change in Pluvial Flooding Inundation Dept (m)	
		+ 0 m	+ 0 m

Site specific hazard & climate data summary

Site results for the high emission pathway (SSP5-8.5)

Baseline and projected trend results for each climate hazard at Navoiyazot 's location are provided below.

Hazard assessed as likely relevant to the site
Hazard assessed as likely not relevant to the site

Hazard Grouping	Present Day	Climate Projection Trend (2030 and 2050, SSP5-8.5)	
Extreme Winds and Storms	Maximum Tropical Cyclone Wind Speed (knots) 0.00 knots	Projected Change in Tropical Cyclone Wind Speed (knots)	
		+ 0 knots	+ 0 knots
Rainfall-Induced Landslides	Rainfall-Induced Landslides Index (Number of days with a potential chance of a landslide event) 0 days	Projected Change in Rainfall-Induced Landslides Index (Number of days with a potential chance of a landslide event)	
		+ 0 days	+ 0 days
River Flooding	River Flooding Inundation Depth (m) 0.00 m	Projected Change in River Flooding Inundation Depth (m)	
		+ 0 m	+ 0 m
Drought and Water Stress	Water Stress (categorical) Extremely High (>80%)	Projected Change in Water Stress (categorical)	
		Extremely High (>80%)	Extremely High (>80%)
Wildfires	Forest Fire Danger Index (Number of days with fire-permitting climatic conditions) 195 days	Projected Change in Forest Fire Danger Index (Number of days with fire-permitting climatic conditions)	
		- 6 day	+ 16 days
	Maximum Burned Area (km ²) 0.76 km²	Projected change in Maximum Burned Area (km ²)	
		No data	No Data

Site specific hazard & climate data summary

Site results against SSP1-2.6

Baseline and projected trend results for each climate hazard at Navoiyazot 's location are provided below.

Hazard assessed as likely relevant to the site
Hazard assessed as likely not relevant to the site

Hazard Grouping	Present Day	Climate Projection Trend (2030 and 2050, SSP1-2.6)	
Coastal and Offshore Flooding	Coastal Flooding Inundation Dept (m) 0 m	Projected change in Coastal Flooding Inundation Dept (m)	
		+ 0 m	+ 0 m
Extreme Cold	Cold Spell Duration Index (days) 13.50 days	Projected change in Cold Spell Duration Index (days)	
		- 8.8 days	- 7.6 day
Extreme Heat	Warm Spell Duration Index (days) 25.40 days	Projected change in Warm Spell Duration Index (days):	
		+ 21.80 day	+ 40 days
Extreme Rainfall Flooding	Pluvial Flooding Inundation Dept (m) 0 m	Projected change in Pluvial Flooding Inundation Dept (m)	
		+ 0 m	+ 0 m

Site specific hazard & climate data summary

Site results against SSP1-2.6

Baseline and projected trend results for each climate hazard at Navoiyazot 's location are provided below.



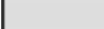






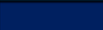
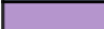
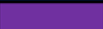

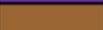




Hazard assessed as likely relevant to the site
Hazard assessed as likely not relevant to the site

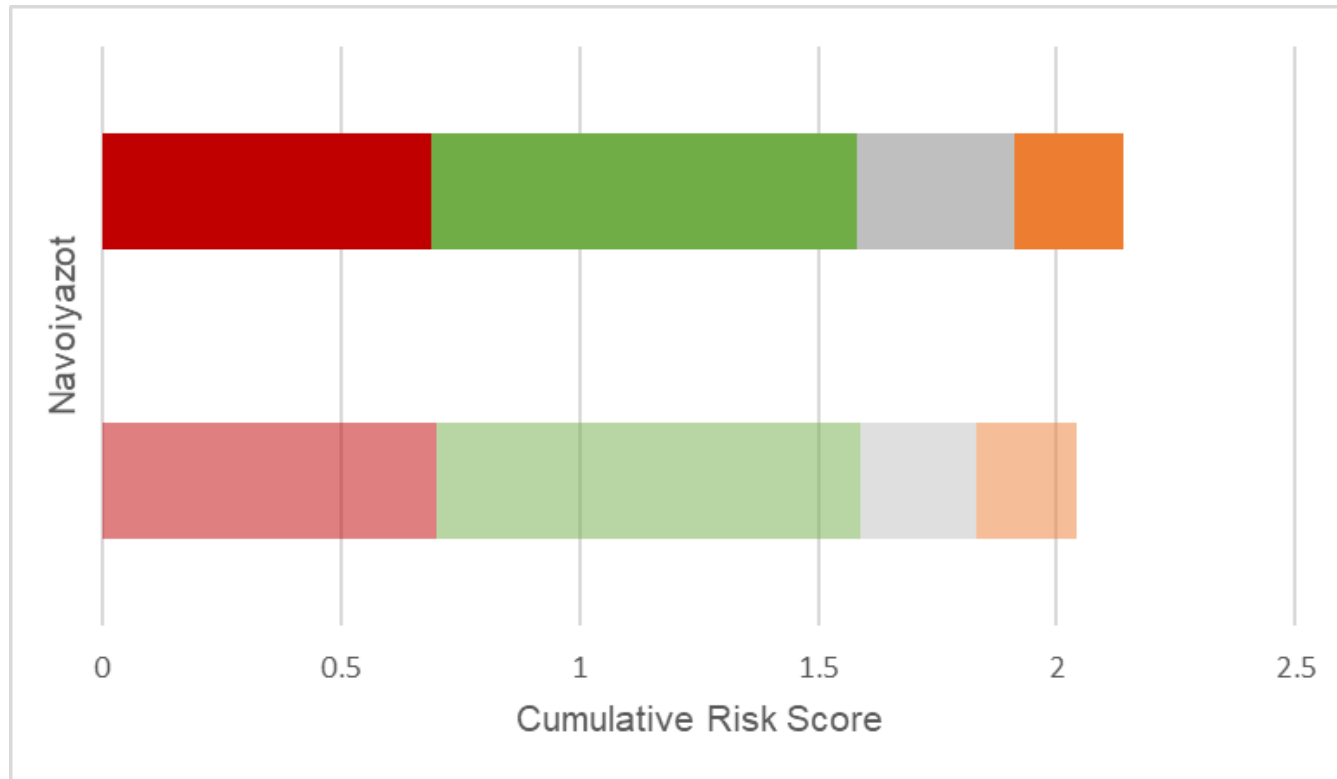
Hazard Grouping	Present Day	Climate Projection Trend (2030 and 2050, SSP1-2.6)	
Extreme Winds and Storms	Maximum Tropical Cyclone Wind Speed (knots) 0.00 knots	Projected Change in Tropical Cyclone Wind Speed (knots)	
		+ 0 knots	+ 0 knots
Rainfall-Induced Landslides	Rainfall-Induced Landslides Index (Number of days with a potential chance of a landslide event) 0 days	Projected Change in Rainfall-Induced Landslides Index (Number of days with a potential chance of a landslide event)	
		+ 0 days	+ 0 days
River Flooding	River Flooding Inundation Depth (m) 0.00 m	Projected Change in River Flooding Inundation Depth (m)	
		+ 0 m	+ 0 m
Drought and Water Stress	Water Stress (categorical) Extremely High (>80%)	Projected Change in Water Stress (categorical)	
		Extremely High (>80%)	Extremely High (>80%)
Wildfires	Forest Fire Danger Index (Number of days with fire-permitting climatic conditions) 195 days	Projected Change in Forest Fire Danger Index (Number of days with fire-permitting climatic conditions)	
		+ 1 day	+ 9 days
	Maximum Burned Area (km ²) 0.76 km²	Projected change in Maximum Burned Area (km ²)	
		No data	No Data

Physical Results: 2030

Projected Risk Scores by Hazard Type

The figure below illustrates the cumulative climate hazard risk scores under SSP1-2.6 & SSP5-8.5 for 2030. Further details on asset and hazard specific risks are provided on the following pages.

SSP1-2.6	SSP5-8.5	Hazard
		Extreme Heat
		Extreme Cold
		River Flooding
		Extreme Rainfall Flooding
		Coastal Flooding
		Tropical Cyclones
		Rainfall-Induced Landslides
		Water Stress & Drought
		Wildfires





Thank you

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